SYMBOL RAYPACK HI-DELTA MAKE & MODEL WH3-502B WATER TUBE DESIGN TYPE 500 CAPACITY (MBH) OUTPUT 425 WATER HEATER SCHEDULE WATER FLOW (GPM) 52 PRESS. DROP (FT) RECOVERY RATE AT 80°F RISE (GPH) FF. 84 % OPERATING WEIGHT (LBS) 500 COMPLET AND 80 (WATER GALLON HEATER CUPRO NICKEL HEAT EXC STORAGE TANK, RAYPAK SHALL BE SUITABLE FOR CHANGER, 1/2" PUMP PART No. 951118 INDOOR INSTALLATION)

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LAARS NEOTHERM NTH210NXN2		SYMBOL MAKE & MODEL			
		MODEL			
WATER TUBE DESIGN	ODEL TYPE CAPACITY (MBH) INPUT OUTPUT WATER TEMP (°F) ELECTRICAL DATA EFF. WEIGHT (LBS)				
210.2	CAPACITY				
200.2	ОИТРИТ	(MBH)			
20	INPUT OUTPUT (GPM) IN OUT VOLT PH HZ (LBS)				
160	Z	WATER T			
180	OUT	EMP (°F)			
120	VOLT	ELECTR			
<u> </u>		RICAL DA			
60 9					
95%	-				
280					
COMPLETE WITH TACO MODEL 0013-HBF3-4J, 1/6 HP BOILER PUMP AND ACCESSORIES (BOILER SHALL BE SUITABLE FOR INDOOR INSTALLATION)		REMARKS			

SPLIT SYSTEM AIR CONDITIONING UNIT SCHEDULE

CU 2 CARRIER 24APA748A003 1600 95 80 67 36,300 51,000 27.8 208/ 230 1 60 16 PURON 370 COMPLI AND AC CU 3 CARRIER 24APA748A003 1600 95 80 67 36,300 51,000 27.8 208/ 230 1 60 16 PURON 370 COMPLI AND AC	$\left(\begin{array}{c} \text{CU} \\ 1 \end{array} \right) \hspace{0.2cm} \text{CARRIER 24ABC630A003} \hspace{0.2cm} 1000 \hspace{0.2cm} 95 \hspace{0.2cm} 80 \hspace{0.2cm} 67 \hspace{0.2cm} 21,300 \hspace{0.2cm} 29,000 \hspace{0.2cm} 16.8 \hspace{0.2cm} \begin{array}{c} 208 \\ 230 \end{array}$	evar: Crivi (°F) DB WB SENSIBLE TOTAL MCA	MAKE & MODEL EVAB CEM TEMP (BTU) COOLING CAPACITY (BTU)		
1600 95 80 67 36,300 51,000 27.8 208/230 1 60 16 PURON 370 1600 95 80 67 36,300 51,000 27.8 208/230 1 60 16 PURON 370	1000 95 80 67 21,300 29,000 16.8	evar: Crivi (°F) DB WB SENSIBLE TOTAL MCA	AMB. E.A.T. (F) COOLING CAPACITY (BTU)		
95 80 67 36,300 51,000 27.8 208/ 95 80 67 36,300 51,000 27.8 208/ 230 1 60 16 PURON 370	95 80 67 21,300 29,000 16.8	(°F) DB WB SENSIBLE TOTAL MCA	AMB. E.A.T. (F) COOLING CAPACITY (BTU)		
80 67 36,300 51,000 27.8 208/ 1 60 16 PURON 370 80 67 36,300 51,000 27.8 208/ 1 60 16 PURON 370	80 67 21,300 29,000 16.8	DB WB SENSIBLE TOTAL MCA	E.A.T. (F) COOLING CAPACITY (BTU)		
67 36,300 51,000 27.8 208/ 67 36,300 51,000 27.8 208/ 230 1 60 16 PURON 370	67 21,300 29,000 16.8	WB SENSIBLE TOTAL MCA	(F) COOLING CAPACITY (BTU)		
36,300 51,000 27.8 208/ 230 1 60 16 PURON 370 36,300 51,000 27.8 208/ 230 1 60 16 PURON 370	21,300 29,000 16.8	SENSIBLE TOTAL MCA	COOLING CAPACITY (BTU)		
51,000 27.8 208/ 230 1 60 16 PURON 370 51,000 27.8 208/ 230 1 60 16 PURON 370	29,000 16.8	TOTAL MCA			
27.8 208/ 230 1 60 16 PURON 370 27.8 208/ 27.8 230 1 60 16 PURON 370	16.8	MCA			
208/ 230 1 60 16 PURON 370 208/ 230 1 60 16 PURON 370		MCA V	т		
1 60 16 PURON 370 1 60 16 PURON 370	208, 230	<			
16 PURON 370 16 PURON 370		VOLT	ELECTRICAL DATA		
16 PURON 370 16 PURON 370		PH	. DATA		
PURON 370 PURON 370	60	ZH	0		
370 370	16	0			
	PURON	- - - -	REFRIG.		
COMPL AND AC COMPLI AND AC	160	(LBS)	OPER WT		
COMPLETE WITH REFRIGERATION TUBING AND ACCESSORIES COMPLETE WITH REFRIGERATION TUBING AND ACCESSORIES	COMPLETE WITH REFRIGERATION TUBING AND ACCESSORIES AND NEW DISCONNECT SWITCH	REMARKS			

FORCED AIR FURNACE SCHED П

												<u></u>	
FAU	FAU 10	FAU 9	FAU 8	FAU 7	FAU 6	FAU 5	FAU FAU	FAU 3	FAU 2	FAU		SYMBOL	
CARRIER 58STX07010012	CARRIER 58STX07010016	CARRIER 58STX07010016	CARRIER 58MEB04012	MAKE & MODEL									
1200	1200	1200	1200	1200	1200	1200	1200	1600	1600	1000	CFM		
0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	ESP (IN)	SUPPL	
1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/2	1/2	1/2	HP	SUPPLY FAN	
120/1/60	120/1/60	120/1/60	120/1/60	120/1/60	120/1/60	120/1/60	120/1/60	120/1/60	120/1/60	120/1/60	VOLTAGE		٦
66	66	66	66	66	66	66	66	66	66	40	INPUT	HEATING CA	
54	54	54	54	54	54	54	54	54	54	38	ОИТРИТ	HEATING CAPACITY (MBH)	
]			CARRIER CNPVP4817ACA	CARRIER CNPVP4817ACA	CARRIER CNPVP3617ACA	COOLING COIL MAKE AND MODEL		FURNACE SCHEDULE
0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.95	AFUE		
30% DISPOSABLE	30% DISPOSABLE	30% DISPOSABLE	FILTERS										
120	120	120	120	120	120	120	120	250	250	230	OPERATING WEIGHT (LBS)		
4" FLUE DIAMETER. PROVIDE UPFLOW FURNACE WITH BOTTOM RETURN, COMPLETE WITH ALL ACCESSORIES (UPRIGHT POSITION)	4" FLUE DIAMETER. PROVIDE UPFLOW FURNACE WITH BOTTOM RETURN, COMPLETE WITH ALL ACCESSORIES (UPRIGHT POSITION)	4" FLUE DIAMETER. PROVIDE UPFLOW FURNACE WITH BOTTOM RETURN, COMPLETE WITH ALL ACCESSORIES (UPRIGHT POSITION)	4" FLUE DIAMETER. PROVIDE UPFLOW FURNACE WITH BOTTOM RETURN, COMPLETE WITH ALL ACCESSORIES (UPRIGHT POSITION)	4" FLUE DIAMETER. PROVIDE UPFLOW FURNACE WITH BOTTOM RETURN, COMPLETE WITH ALL ACCESSORIES (UPRIGHT POSITION)	4" FLUE DIAMETER. PROVIDE UPFLOW FURNACE WITH BOTTOM RETURN, COMPLETE WITH ALL ACCESSORIES (UPRIGHT POSITION)	4" FLUE DIAMETER. PROVIDE UPFLOW FURNACE WITH BOTTOM RETURN, COMPLETE WITH ALL ACCESSORIES (UPRIGHT POSITION)	4" FLUE DIAMETER. PROVIDE UPFLOW FURNACE WITH BOTTOM RETURN, COMPLETE WITH ALL ACCESSORIES (UPRIGHT POSITION)	COMPLETE WITH ALL ACCESSORIES AND CONTROLS. UPRIGHT POSITITION, DX COOLING COIL, TWIN PACK KIT AND GREENHECK SERIES ES-10 BAROMETRIC DAMPER	COMPLETE WITH ALL ACCESSORIES AND CONTROLS. UPRIGHT POSITITION, DX COOLING COIL, TWIN PACK KIT AND GREENHECK SERIES ES-10 BAROMETRIC DAMPER	COMPLETE WITH ALL ACCESSORIES AND CONTROLS. UPRIGHT POSITION AND DX— COOLING COIL	REMARKS		

(IN WG) 0.4 푸 1/2 E CTRICAL DATA VOLT 208 뫋 **-**НΖ 60 FILTER EFFICIENCY 30% DISPOSIBLE FRESH AIR (CFM) 180

AN COIL

SCHEDULE

OPER WT (LBS)

160

PROVIDE WITH ALL ACCESSORIES AND DEVICES, BRACING AND SUPPORTS FOR VERTICAL INSTALLATION. FIELD REPLACE FACTORY FURNISHED R-410 THERMAL EXPANSION VALVE WITH MANUFACTURER RECOMMENDED R-22 THERMAL EXPANSION VALVE

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CHANICAL 刀 П QUIRE MENT (V)

- FURNISH ALL LABOR, MATERIALS, EQUIPMENT, TRANSPORTATION, TESTING AND SERVICES NECESSARY FOR THE COMPLETE AND SATISFACTORY INSTALLATION OF THE WORK INDICATED ON THE DRAWINGS AND SPECIFIED HEREIN, INCLUDING ROUGH—IN AND FINAL CONNECTION TO ALL EQUIPMENT REQUIRING SERVICES.
- SCOPE OF WORK SHALL INCLUDE ALL CONDUITS, DISCONN LOW VOLTAGE WIRING, AS SHOWN AND SPECIFIED PLUMBIN EQUIPMENT PLATFORMS, CUTTINGS AND PATCHINGS, DEMOLOF EXISTING SYSTEMS AND EQUIPMENT NECTS, LINE AND ING SYSTEMS, ROOF DLITION AND HAULING

2

- BECAUSE OF THE SMALL SCALE OF THE DRAWINGS, IT IS IMPOSSIBLE TO INDICATE ALL OFFSETS, FITTINGS AND ACCESSORIES. WHICH MAY BE REQUIRED. CAREFULLY INVESTIGATE THE CONDITIONS SURROUNDING THE INSTALLATION OF THIS WORK, FURNISH THE NECESSARY FITTINGS, ACCESSORIES AND DEVICES WHICH MAY BE REQUIRED TO COMPLETE THE INSTALLATION. VERIFY THAT ADEQUATE SPACE IS AVAILABLE TO INSTALL WORK AS SPECIFIED AND INDICATED, PRIOR TO DETAILING AND FABRICATION.
- THE GENERAL ARRANGEMENT INDICATED ON THE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS POSSIBLE. IN THE EVENT A FIELD CONDITION ARISES WHICH MAKES IT IMPOSSIBLE OR IMPRACTICAL TO INSTALL WORK AS SHOWN ON DRAWINGS, SUBMIT, IN WRITING THE PROPOSED "DEPARTURES" TO ENGINEER FOR REVIEW PRIOR TO INSTALLATION.

24.

25.

23.

E MECHANICAL EQUIPMENT AND INSTALLATION SHALL COMP Y OF TORRANCE BUILDING AND MECHANICAL CODES, AND LEGALLY CONSTITUTED AUTHORITIES HAVING JURISDICTION. MPLY WITH THE ND REQUIREMENTS

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- BEFORE BIDDING ON THIS WORK, CONTRACTORS SHALL MAKE A CAREFUL EXAMINATION OF THE PREMISES AND SHALL THOROUGHLY FAMILIARIZE THEMSELVES WITH THE EXISTING CONDITIONS AND REQUIREMENTS OF CONTRACT. BY THE ACT OF SUBMITTING A PROPOSAL FOR THE WORK INCLUDED IN THIS CONTRACT. THE CONTRACTOR SHALL BE DEEMED TO HAVE MADE SUCH STUDY AND EXAMINATION, AND THAT HE/SHE IS FAMILIAR WITH AND ACCEPTS ALL CONDITIONS OF THE SITE.
- THE LOCATION OF APPARATUS AND EQUIPMENT INDICATED ON DRAWINGS ARE APPROXIMATE. DUCTS AND EQUIPMENT SHALL INSTALLED IN SUCH A MANNER TO AVOID ALL OBSTRUCTIONS, HEADROOM AND KEEP OPENINGS AND PASSAGES CLEAR. ON THE ALL BE ONS, PRESERVE

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7.

- EQUIPMENT AND DUCTWORK SHALL OPERATE WITHOUT ANY NOISE AND VIBRATION DURING ALL PHASES OF OPERATION THE ENGINEER. WHERE EXCESSIVE NOISE AND VIBRATION ECORRECTED AT NO EXTRA COST TO THE PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING FOR INSTALLATION. PRIOR TO START OF WORK CONTRACT A COMPLETE SET OF CONSTRUCTION DOCUMENTS FOR ALL DIMENSIONS, SPACE REQUIREMENTS AND POINTS OF CEQUIPMENT, AND MAKE THE NECESSARY ADJUSTMENTS IN AVOID CONFLICT WITH STRUCTURAL MEMBERS AND WORK OF AVOID CONFLICT WITH AVOID CONFLI NY OBJECTIONABLE ON AS DETERMINED BY I EXIST, IT SHALL BE IG AVAILABLE SPACE
 CTOR SHALL EXAMINE
 LL TRADES AND VERIFY
 CONNECTION TO ALL
 V LAYING OUT WORK TO
 OF OTHER TRADES.
- VOLUME DAMPERS SHALL BE PROVIDED IN EACH BRANCH DIFFUSER AND REGISTER, AND SHALL BE ADJUSTABLE TYP A DUCT TO EACH PE.

10.

9.

- EACH MECHANICAL OR GRAVITY VENTILATION SYSTEM OR UNIT (SUPPLY AND/OR EXHAUST) EXCEPT COMBUSTION AIR SHALL BE EQUIPPED WITH A MEANS OF SHUT-OFF WHEN VENTILATION IS NOT REQUIRED.
- 12.

13.

- EACH AIR HANDLING SYSTEM WITH CAPACITY MORE THAN 2000 CFM SHALL BE PROVIDED WITH SUITABLE SMOKE DETECTORS IN THE SUPPLY AIR STREAM, INTERLOCKED WITH FAN STARTER(S) FOR AUTOMATIC SHUT-OFF.
- EACH HVAC SYSTEM SHALL BE PROVIDED WITH AN AUTOMATIC SPACE TEMPERATURE CONTROL DEVICE, CAPABLE OF BEING SET TO MAINTAIN SPACE TEMPERATURE SET POINTS FROM 55° F TO 85° F, AND SHALL BE CAPABLE OF OPERATING THE SYSTEM HEATING AND COOLING IN SEQUENCE. CONTROLS SHALL BE ADJUSTED TO PROVIDE A TEMPERATURE RANGE UP TO 10° F BETWEEN FULL HEATING AND COOLING, AND HAVE THE CAPABILITY TO TERMINATE ALL HEATING AT TEMPERATURES ABOVE 70° F AND COOLING AT TEMPERATURES BELOW 75° F.
- AUTOMATIC CONTROLS SHALL COMPLY WITH THE STATE OF CALIFORNIA ENERGY COMMISSION TITLE-24 REQUIREMENTS FOR OFF-HOUR CONTROL.
- AIR CONDITIONING UNITS SHALL BE STATE LISTED OF CALIFORNIA ENERGY COMMISSION

16.

WATERTIGHT FLASHING SHALL BE PROVIDED WHEREVER DUCTWORK OR PIPING PENETRATES ROOF OR EXTERIOR WALLS.

Project No. Scale: AS

M-2

WHETHER OR NOT SHOWN ON DRAWINGS OR SPECIFIED HEREIN, FIRE DAMPERS SHALL BE INSTALLED IN DUCTS PASSING THROUGH FIRE RATED WALLS. FIRE DAMPERS SHALL BE COMPLETE WITH FUSIBLE LINK, ECCENTRIC WEIGHT, 16 GA. SLEEVE AND CLOSING STOP. ACCESS TO FUSIBLE LINKS SHALL BE PROVIDED THROUGH ACCESS DOOR. DAMPERS SHALL BE CONSTRUCTED IN ACCORDANCE NFPA WITH 90A REQUIREMENTS, U.L. LISTED AND STATE OF CALIFORNIA FIRE—MARTIAL APPROVED. FIRE DAMPER SHALL BE POTTOROFF SERIES VFD—10 WITH

EQUIPMENT SHALL BE SECURELY FASTENED TO BUILDING STRUCTURE AND THE VIBRATION ISOLATORS, AND EARTHQUAKE RESTRAINTS PER CODE. PERMANENT ACCESS TO EQUIPMENT SHALL BE PROVIDED. PROVIDE MINIMUM OF 42-INCHES CLEAR WORKING SPACE IN FRONT OF ACCESS PANELS TO COMPRESSORS, BLOWER ASSEMBLY AND AIR FILTER SECTIONS.

20.

19.

- MINIMUM VENTILATION RATE SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF ASHRAE AND C.E.C TITLE-24 REQUIREMENTS

22.

21.

- WHERE APPLICABLE EXTEND PLUMBING VENT PIPE HORIZONTALLY ABOVE ROOF TO ALLOW 10 FEET DISTANCE BETWEEN VENT OUTLET AND ANY A/C UNIT FRESH AIR INTAKE
- PROVIDE AND INSTALL NEW PROPERLY SIZED DISCONNECT SWITCH FOR ALL (HV) HEATING VENTILATING UNITS.
- REPLACE ALL EXISTING DISCONNECT SWITCHES FOR ALL REPLACED (AC) AIR CONDITIONING UNITS. DISCONNECT SWITCHES SHALL BE PROPERLY SIZED ACCORDING TO THE SCHEDULED UNIT'S MOCP RATINGS.
- REPLACE ALL EXISTING THERMOSTATS SERVING PACKAGED AND SPLIT SYSTEM AIR CONDITIONING UNITS AND FORCED AIR FURNACES WITH VENSTAR MODEL T-2800
- 円 **ECTRICAL** AND CONTROL SYSTEMS

- WHERE NECESSARY IN DUCTWORK OR CASING, PROVIDE SUITABLE ACCESS DOORS AND FRAMES FOR INSPECTION, OPERATION AND MAINTENANCE OF ALL CONTROLS, MOTOR BEARINGS, OR OTHER APPARATUS CONCEALED BEHIND THE SHEET METAL WORK. ACCESS DOORS IN DUCTS MAY BE OF SINGLE OR DOUBLE PANEL CONSTRUCTION AS REQUIRED TO MATCH THE EXISTING DUCTWORK, CONSTRUCTED OF NOT LESS THAN 18 GAUGE GALVANIZED STEEL AND SHALL HAVE SPONGE RUBBER GASKETS WITH HINGES AND LATCHES. ALL PLUMBING SYSTEM AND PIPING SHALL BE INSTALLED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS REPLACE ALL EXISTING EQUIPMENT PLATFORM AND CURB CAPS
 - BARTEF YOOSEPHIANCE & ASSOCIATES, INC. CONSULTING MECHANICAL ENGINEERS 3734 GLENEAGLES DR. TARZANA, CA 91356 (818) 345-8614, FAX. (818) 345-8615

REPLACEMENT CITY OF TORRANCE

VARIOUS BUILDING'S AIR CONDITIONING UNIT

MECHANICAL EQUIPMENT SCHEDULES

CITY OF TORRANCE, TORRANCE CALIFORNIA